MANITOBA DEPARTMENT OF EDUCATION

SURVEY OF EXISTING SCHOOL COMPUTING

1983

COMPUTER SERVICES
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1. BACKGROUND INFORMATION

Computer Services, Manitoba Department of Education has undertaken to survey all Manitoba schools concerning their existing computing resources during the 1982-83 school year. This survey is a continuation of a previous survey conducted in 1977-78 which examined enrollment patterns in Computer Studies courses, and one conducted in 1980-81 which examined hardware acquistion and usage. The report of the current 1982-83 survey examines enrollment patterns as well as hardware acquisition and usage. Where possible, a comparison is drawn with previous surveys.

II. EXECUTIVE SUMMARY

The number of Manitoba schools reporting the educational use of computers during the 1982-83 school year (400) has increased to over 450% of the number reporting use in the 1980-81 school year (88).

The number of educational computing hardware units in use throughout Manitoba during the 1982-83 school year (1663) has increased to over 700% of the number reported in the 1980-81 school year (226).

The number of microcomputers (1611) used in Manitoba schools during the 1982-83 school year has increased to over 950% of the 1980-81 total (169).

The overall increase in absolute number of students enrolled in computer studies courses or modules in 1982-83 (35 783) is over thirteen times or 1300% of the 1977-78 (2 710) enrollment.

Although the representation of secondary students has changed from 100% to 26% of the total computer studies students, the actual numbers of secondary students enrolled in formal credit courses in computer studies has increased over 300% since 1977-78 from 2710 to 8095 students.

Educational computing in Manitoba is experiencing a cycle of truly explosive growth!

III. COMPUTER USAGE PATTERNS 1980-81 to 1982-83

The number of Manitoba Schools reporting the educational use of computers during the 1982-83 school year (400) has increased to over 450% of the number reporting use in the 1980-81 school year (88). The number of educational computing hardware units in use throughout Manitoba during the 1982-83 school year (1663) has increased over 700% of the number reported in the 1980-81 school year (226). The number of microcomputers (1611) has increased to over 950% of the 1980-81 total (169).

COMPUTER USE IN MANITOBA SCHOOLS

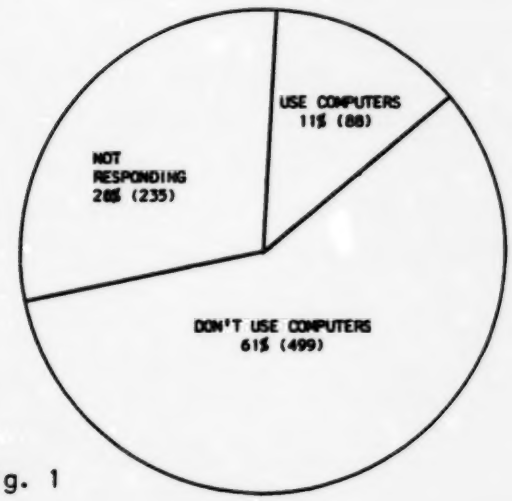


fig. 1

1980-81

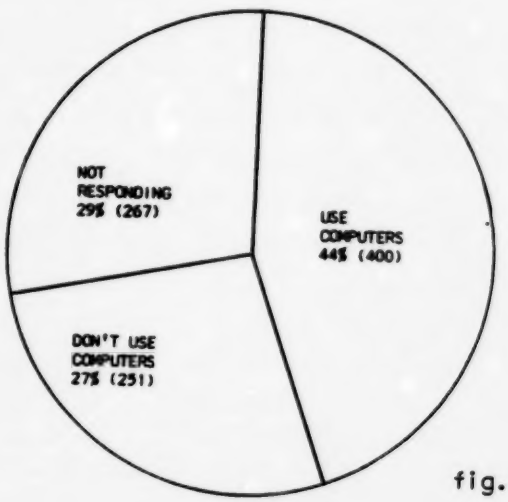


fig. 2

1982-83

These results were obtained by comparing the data from surveys conducted during the 1980-81 and 1982-83 school years. Each survey sampled the entire population of Manitoba schools and received approximately the same percent of total survey returns in each case. The comparison between 1980-81 and 1982-83 survey values are summarized in Tables 1, 2, 3, and 4 following.

TABLE #1

STATUS OF EDUCATIONAL COMPUTING IN MANITOBA
COMPARISON BETWEEN 1980-81 AND 1982-83 SCHOOL YEARS

	1980-81		1982-83	
	#	%	#	%
SCHOOLS NOT RESPONDING TO SURVEY	235	28	267	29
RESPONDING SCHOOLS USING COMPUTERS	88	11	400	44
RESPONDING SCHOOLS NOT USING COMPUTERS	499	61	251	27
TOTAL MANITOBA SCHOOLS SURVEYED	822	100	918	100

TABLE #2

HARDWARE USED IN MANITOBA SCHOOLS

COMPARISON BETWEEN 1980-81 AND 1982-83 SCHOOL YEARS

	1980-81		1982-83	
	#	%	#	%
BATCH TERMINALS	37	16	34	2
INTERACTIVE TERMINALS	20	9	18	1
PET MICROCOMPUTERS	115	51	710	43
TRS-80 MICROCOMPUTERS	30	13	529	32
APPLE MICROCOMPUTERS	12	5	254	15
OTHER MICROCOMPUTERS	12	5	118	7
TOTAL COMPUTER HARDWARE UNITS	226	100	1663	100

TABLE #3

COMPUTER TERMINALS USED IN MANITOBA SCHOOLS
COMPARISON BETWEEN 1980-81 AND 1982-83 SCHOOL YEARS

	1980-81		1982-83	
	#	%	#	%
BATCH TERMINALS	37	65	34	67
INTERACTIVE TERMINALS	20	35	18	33
TOTAL TERMINALS	57	100	52	100

TABLE #4

MICROCOMPUTERS USED IN MANITOBA SCHOOLS
COMPARISON BETWEEN 1980-81 AND 1982-83 SCHOOL YEARS

	1980-81		1982-83	
	#	%	#	%
PET MICROCOMPUTERS	115	68	710	44
TRS-80 MICROCOMPUTERS	30	18	529	33
APPLE MICROCOMPUTERS	12	7	254	16
OTHER MICROCOMPUTERS	12	7	118	7
TOTAL MICROCOMPUTERS	169	100	1611	100

Of a total population of 918 Manitoba schools surveyed in 1982-83, 651 returned the survey form and of these, 400 reported the educational use of computers.

The 400 responding schools reporting the educational use of computers indicated their computing support was supplied by a total of 1663 hardware units. Of the total 1663 educational computing hardware units used in Manitoba schools, 18 (1%) are interactive terminals and 34 (2%) are batch terminals connected to the Cybershare network. Although the batch operation appears to be a relatively small percent of total hardware, it must be remembered that each batch terminal is capable of serving many students. The remaining 1611 hardware units are microcomputers. These 1611 microcomputers are represented by 710 (44%) Commodore PET, 529 (33%) TRS-80, 254 (16%) Apple and 118 (7%) "Other" microcomputers. A comparison of the distribution of the type of computing hardware found in Manitoba schools in the 1982-83 school year with the 1980-81 distribution can be made through consideration of figures 3 and 4 following.

TYPE OF COMPUTING HARDWARE 1980-81

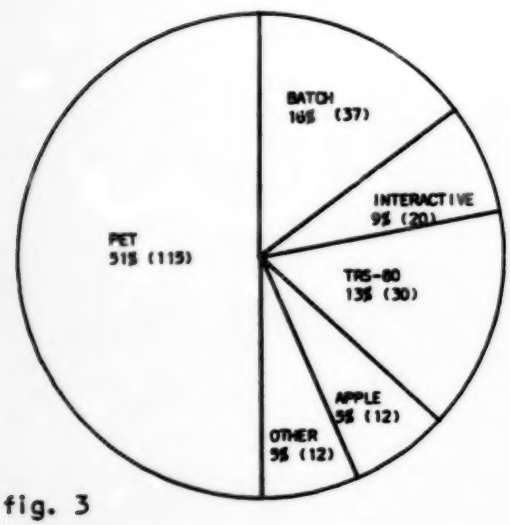


fig. 3

TYPE OF COMPUTING HARDWARE 1982-83

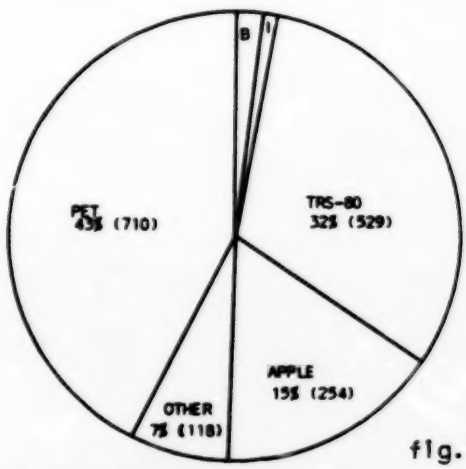


fig. 4

B - BATCH 2% (34)
I - INTERACTIVE 1% (17)

IV. COMPUTER USE IN VARIOUS EDUCATIONAL ENVIRONMENTS

Sections IV, V and VI will deal specifically with the data compiled using the 1982-83 survey. A copy of the actual survey form sent to all Manitoba schools is included in Appendix A. Also included in Appendix A is a copy of this survey form with the blanks filled using the raw data values obtained in the 1982-83 survey.

The 400 Manitoba schools reporting use of 1663 educational computing hardware units identified nine catagories of usage.

These nine catagories are:

1) Administrative
2) Primary)K-3)
3) Elementary (4-6)
4) Middle Years (7-9)
5) Secondary (10-12)
6) Primary and Elementary (K-6)
7) Primary, Elementary, Middle Years (K-9)
8) Middle Years, Secondary (7-12)
9) Primary, Elementary, Middle Years, Secondary (K-12)

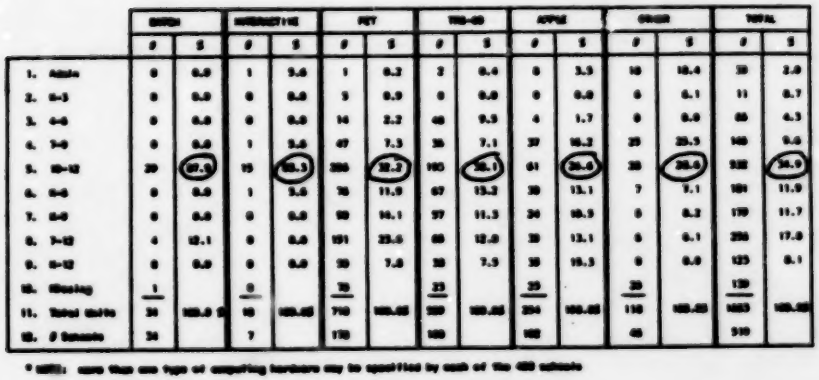
Catagories 6, 7, 8, and 9 are NOT cumulative, that is, they do not include the separate values of catagories 2, 3, 4, or 5.

The total number of schools is 519 instead of 400 due to the fact that a particular school may have more than one type of computing hardware.

This data is summarized in Table #5 below.

TABLE #5

EDUCATIONAL ENVIRONMENTS VS TYPE OF COMPUTER



Examining the percent rate columns of Table #5 it is possible to identify the grade level where major use of each type of educational computing hardware occurs. The largest column percent rates are circled in this table.

The largest user of computer hardware is the secondary (10-12) level. This concentration of educational computing hardware units at the secondary level is disproportionate to the total student enrollment at this level compared with that at the other levels. However, this concentration of hardware at the secondary level may be due to the existence, since the early 1970's, of formal Department of Education sponsored courses. An increase in the number of hardware units at other grade levels may be expected once the K-9 Awareness Curriculum is piloted in September, 1983.

Table #6 below reverses the axes of Table #5 and accumulates values into cumulative totals, for example K-6 includes K-3 and 4-6 as well as specifically K-6 responses. The highest percent rate corresponding to the type of educational computing hardware at each level is circled in this table.

TABLE #6

TYPE OF COMPUTER VS EDUCATIONAL ENVIRONMENT

	[illegible]		K-3		4-6		7-9		10-12		K-6 (K-3, 4-6)		K-9 (K-3, 4-6, 7-9)		7-12 (7-9, 10-12)		K-12 TOTAL	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
BATCH	0	0.0	0	0.0	0	0.0	0	0.0	39	5.5	0	0.0	0	0.0	32	3.4	33	2.2
INTERACTIVE	1	3.3	0	0.0	0	0.0	1	0.7	15	2.0	1	0.4	0	0.0	16	1.7	16	1.2
PET	1	3.3	5	45.4	14	21.2	47	32.2	286	36.7	95	35.0	232	40.3	415	44.0	640	42.0
TRS-80	2	6.7	0	0.0	48	72.7	30	20.7	193	25.3	115	44.6	288	50.2	294	31.4	586	38.2
APPLE	0	26.7	0	0.0	4	6.1	37	25.3	81	11.5	34	13.2	88	15.5	128	13.6	229	15.0
OTHER	10	56.0	6	54.5	0	0.0	25	17.1	28	5.3	13	5.0	46	8.0	59	6.3	98	6.4
TOTAL	30	100.00	11	100.00	66	100.00	146	100.00	732	100.00	258	100.00	579	100.00	944	100.00	1524*	100.00

* NOTE: some values are missing as not all the responding schools indicated grade level use of their computing hardware.

V. USE OF VARIOUS MODELS OF MICROCOMPUTERS

The following figures illustrate the distribution of various models for each of the PET, TRS-80 and Apple microcomputers.

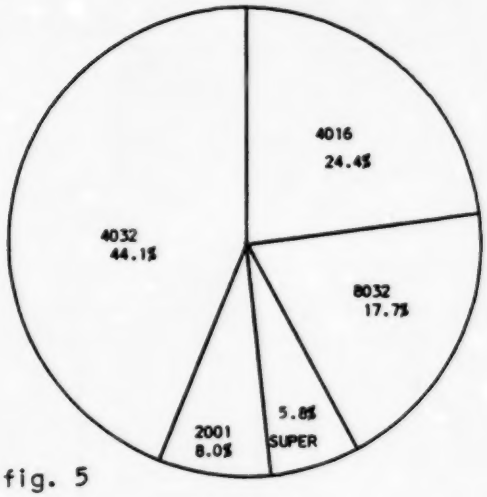


fig. 5

MODELS OF PETS

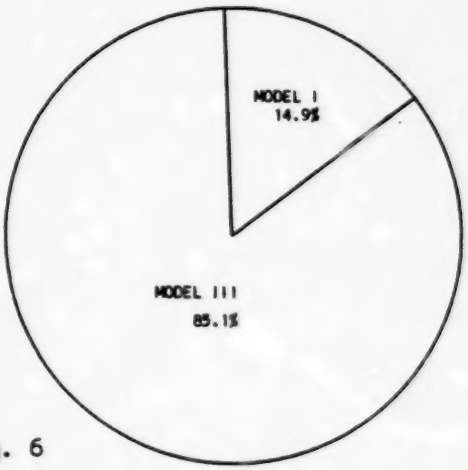


fig. 6

MODELS OF TRS-80

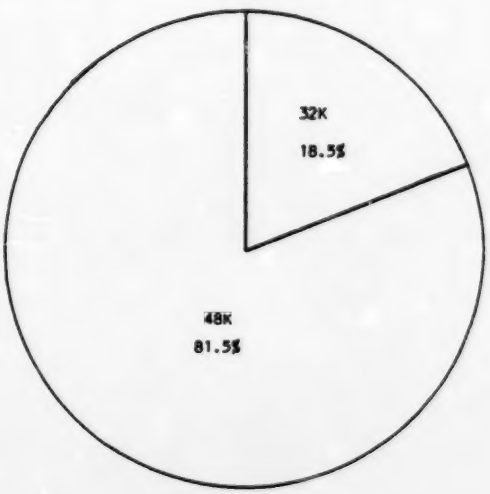


fig. 7

MODELS OF APPLE

The following tables show a breakdown of the Educational Environment by specific model of PET (Table #7), TRS-80 (Table #8), and Apple (Table #9) microcomputers. The values given for each environment are NOT cumulative.

In Table #7 the highest column percent rates are circled. These represent the educational environment containing the majority of each particular type of PET microcomputer.

TABLE #7

EDUCATIONAL ENVIRONMENT VS MODEL OF PET MICROCOMPUTER

	2001		4016		4032		8032		SUPERPET		TOTAL	
	#	%	#	%	#	%	#	%	#	%	#	%
ADMIN	0	0.0	0	0.0	0	0.0	1	0.8	0	0.0	1	0.2
K-3	1	2.2	1	0.6	3	1.1	0	0.0	0	0.0	5	0.9
4-6	0	0.0	5	3.2	9	3.2	0	0.0	0	0.0	14	2.2
7-9	8	17.4	20	12.7	16	5.8	3	2.5	0	0.0	47	7.3
10-12	13	28.3	9	5.7	73	26.3	79	(66.4)	32	(80.0)	206	(32.2)
K-6	4	8.7	30	19.1	42	15.1	0	0.0	0	0.0	76	11.9
K-9	1	2.2	44	(28.0)	34	12.2	9	7.6	2	5.0	90	14.1
7-12	19	(41.3)	28	17.8	79	(28.4)	19	16.0	6	15.0	151	23.6
K-12	0	0.0	20	12.7	22	7.9	8	6.7	0	0.0	50	7.8
MISSING	11		16		35		7		1		70	
TOTAL UNITS	57	100.0%	173	100.0%	313	100.0%	126	100.0%	41	100.0%	710	100.0%
# SCHOOLS	21		70		105		42		12			

In Table #8 the highest column percent rates are circled. These represent the educational environment containing the majority of each particular model of TRS-80 microcomputer.

TABLE #8

EDUCATIONAL ENVIRONMENT VS MODEL OF TRS-80 MICROCOMPUTER

	MODEL I		MODEL III		TOTAL	
	#	%	#	%	#	%
ADMIN	0	0.0	2	0.5	2	0.4
K-3	0	0.0	0	0.0	0	0.0
4-6	32	(42.7)	16	3.7	48	9.5
7-9	4	5.3	32	7.4	36	7.1
10-12	21	28.0	172	(39.9)	193	(38.1)
K-6	3	4.0	64	14.8	67	13.2
K-9	8	10.7	49	11.4	57	11.3
7-12	6	8.0	59	13.7	65	12.8
K-12	1	1.3	37	8.6	38	7.5
MISSING	4		19		23	
TOTAL UNITS	79	100.0%	450	100.0%	529	100.0%
# SCHOOLS	28		141			

In Table #9 the highest column percent rates are circled. These represent the educational environment containing the majority of each particular model of Apple microcomputers.

TABLE #9

EDUCATIONAL ENVIRONMENT VS MODEL OF APPLE MICROCOMPUTER

	32K		48K		TOTAL	
	#	%	#	%	#	%
ADMIN	1	2.6	7	3.7	8	3.5
K-3	0	0.0	0	0.0	0	0.0
4-6	0	0.0	4	2.1	4	1.7
7-9	1	2.6	36	18.9	37	16.2
10-12	8	20.5	53	(27.9)	61	(26.6)
K-6	6	15.4	24	12.6	30	13.1
K-9	5	12.8	19	10.0	24	10.5
7-12	6	15.4	24	12.6	30	13.1
K-12	12	(30.8)	23	12.1	35	15.3
MISSING	8		17		25	
TOTAL UNITS	47	100.0%	207	100.0%	254	100.0%
# SCHOOLS	18		85			

VI. PERIPHERAL EQUIPMENT USAGE

A summary of peripheral equipment used in Manitoba schools is listed in Table #10 below. Of the 400 Manitoba schools reporting use of computers, 56% use tape drives, 65% use disk drives, 22% use tape drives only, 31% use disk drives only, and 34% use both tape and disk drives for secondary storage. Only 13% reported having neither tape nor disk drives. Printers were used in 62% of the schools with computers.

TABLE #10

PERIPHERAL EQUIPMENT USED IN MANITOBA SCHOOLS

	Schools		# OF UNITS
	#	%	
TAPE DRIVES	224	56.0%	775
TAPE DRIVES ONLY	88	22.0%	181
DISK DRIVES	261	65.3%	630
DISK DRIVES ONLY	125	31.3%	367
TAPE & DISK DRIVES	136	34.0%	471
PRINTERS	248	62.0%	336
OTHER	44	11.0%	64

fig. 8 PERIPHERAL EQUIPMENT USED IN SCHOOLS

VII. ENROLLMENT PATTERNS IN THE COMPUTING CURRICULUM 1977-78 TO 1982-83

Data concerning the implementation of a computer studies program in Manitoba schools K-12 during the 1982-83 school year is summarized in Table #11 below. The final figure of 17.8% represents those Manitoba students receiving instruction in computer studies.

TABLE #11

COMPUTER STUDIES CURRICULUM IMPLEMENTATION

MANITOBA SCHOOLS RESPONDING TO SURVEY	651
RESPONDING SCHOOLS USING COMPUTER HARDWARE	400
COMPUTER-USING SCHOOLS OFFERING COMPUTER COURSES	302
TOTAL MANITOBA SCHOOLS SURVEYED	918
% MANITOBA SCHOOLS OFFERING COMPUTER COURSES	32.9%
% RESPONDING SCHOOLS OFFERING COMPUTER COURSES	46.4%
% COMPUTER-USING SCHOOLS OFFERING COMPUTER COURSES	75.5%
TOTAL MANITOBA ENROLLMENT	201 386
TOTAL ENROLLMENT IN COMPUTER COURSES	35 783
% ENROLLMENT IN COMPUTER COURSES	17.8%

The change in computer studies enrollment patterns between the 1977-78 and 1982-83 school years is illustrated in figures 9 and 10 below.

1977-78 COMPUTER STUDIES ENROLLMENT PATTERNS

(2 710 Students)

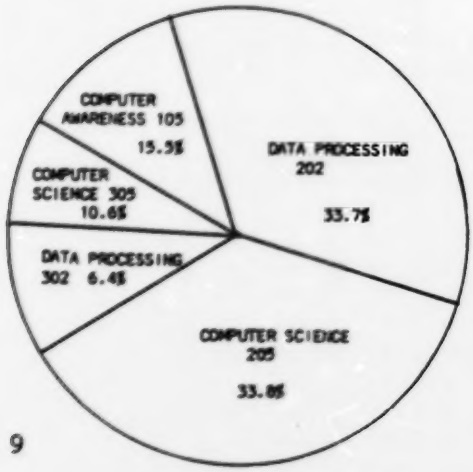


fig. 9

1982-83 COMPUTER STUDIES ENROLLMENT PATTERNS

(35 783 Students)

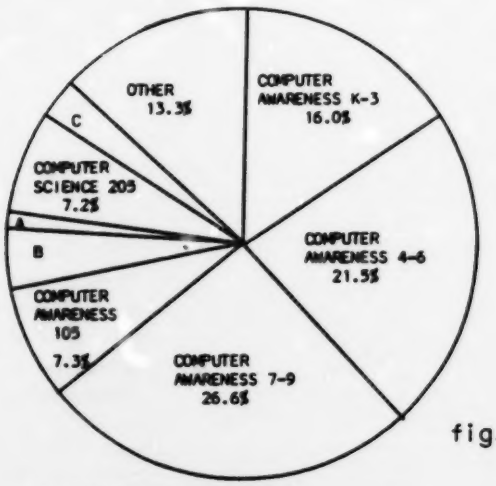


fig. 10

A - DATA PROCESSING 302 1.2%
B - DATA PROCESSING 202 4.3%
C - COMPUTER SCIENCE 305 2.5%

In 1977-78 NO formal instruction in computer studies was provided at the K-9 level. Computer studies in 1977-78 was restricted to secondary level students. At that time 2710 students, or 9.2% of the total population of computer-using schools (28 627), received instruction in computer studies.

By 1982-83, not only is formal instruction in computer studies offered at the K-9 level, but the number of students is largest at this level. During the 1982-83 school year, 35 783 students from K-12, or 40.8% the total population of computer-using schools (87 750) are receiving instruction in computer studies.

Of the 25 783 Manitoba students engaged in computer studies in the 1982-83 school year 64.1% are at the K-9 level. Although the representation of secondary students has changed from 100% to 26.1% of the total computer studies students, the actual numbers of secondary students enrolled in formal credit courses in computer studies has increased over 300% since 1977-78 from 2710 to 8095 students. It should also be noted that the computer studies courses in which the secondary students are enrolled are full-credit courses, that is, they form approxiamtely one sixth of the requirements for a year of study at the secondary level. In contrast to this, the computer studies activities in which the K-9 students are engaged are often integrated as units or modules of other courses such as language arts, social studies or science.

The overall increase in absolute numbers of students enrolled in computer studies in 1982-83 (35 783) is over thirteen times or 1300% of the 1977-78 (2 710) enrollment. This data is summarized in Table #12.

TABLE #12

COMPARISON OF 1977-78 AND 1982-83 ENROLLMENT PATTERNS FOR COMPUTER COURSES

	1977-78		1982-83	
	#	%	#	%
COMPUTER AWARENESS K-3	0	0.0	5729	16.0
COMPUTER AWARENESS 4-6	0	0.0	7681	21.5
COMPUTER AWARENESS 7-9	0	0.0	9803	27.4
COMPUTER AWARENESS 10B	421	15.5	2624	7.3
DATA PROCESSING 202	912	33.7	1544	4.3
DATA PROCESSING 302	174	6.4	425	1.2
COMPUTER SCIENCE 209	917	33.8	2591	7.2
COMPUTER SCIENCE 309	286	10.6	911	2.5
OTHER	0	0.0	4775	13.3
TOTAL	2710	100.00	35783	100.00
TOTAL POPULATION COMPUTER-USING SCHOOLS	28 627		87 750	
% STUDENTS ENROLLED IN FORMAL COURSES	9.25		40.65	

Enrollment data for computer studies courses is summarized in Table #13 following. The first column lists the number of schools offering computer courses at each level. The second column lists the number of schools responding to the survey at each level. The third column lists the percent rate of responding schools offering computer courses at each level. The highest percent of responding schools offering computer courses was 62% at the middle years (7-9) level.

TABLE #13

ENROLLMENT DATA FOR COMPUTER STUDIES COURSES IN MANITOBA SCHOOLS 1982-83

	# SCHOOLS OFFERING	# SCHOOLS RESPONDING		ENROLLMENT	ENROLLMENT IN LEVEL	% OF LEVEL ENROLLMENT
COMPUTER AWARENESS K-3	67	268	25.0%	5 729	62 021	9.2%
COMPUTER AWARENESS 4-6	102	266	38.3%	7 681	46 731	16.4%
COMPUTER AWARENESS 7-9	104	167	62.3%	9 503	47 302	20.1%
COMPUTER AWARENESS 10S	59	143	41.3%	2 624	15 396	17.0%
DATA PROCESSING 202	46	143	32.2%	1 544	14 804	10.4%
DATA PROCESSING 302	25	139	18.0%	425	15 132	2.8%
COMPUTER SCIENCE 205	70	143	49.0%	2 591	14 804*	17.5%
COMPUTER SCIENCE 305	48	139	34.5%	911	15 132*	6.0%
OTHER	90			4 775		
TOTAL	302			35 783	201 386	

* NOT COUNTED TWICE IN TOTAL

The number of students receiving instruction in computer studies at each level is listed in the fourth column of Table #13. The total Manitoba student population at each level is listed in the fifth column. The percent of all Manitoba students receiving instruction in computer studies at each level is listed in the sixth column. Figures illustrating the percent of students receiving instruction in computer studies at the primary (K-3), elementary (4-6), middle years (7-9) and secondary levels (10-12) are following.

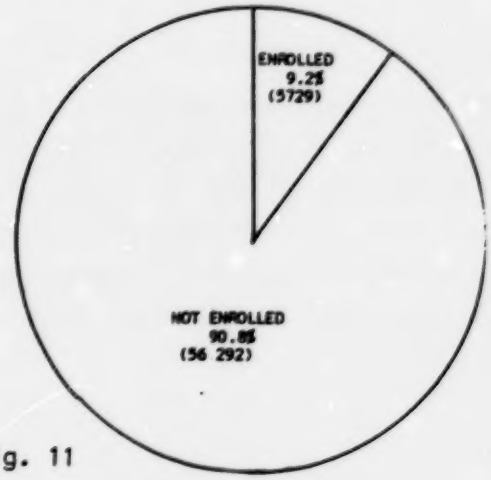


fig. 11

K-3 INVOLVED IN COMPUTER STUDIES

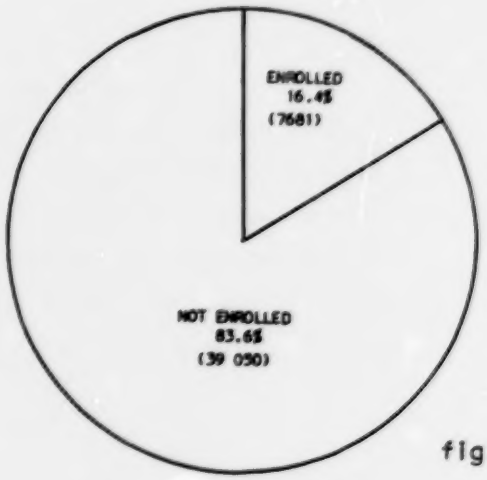


fig. 12

4-6 INVOLVED IN COMPUTER STUDIES

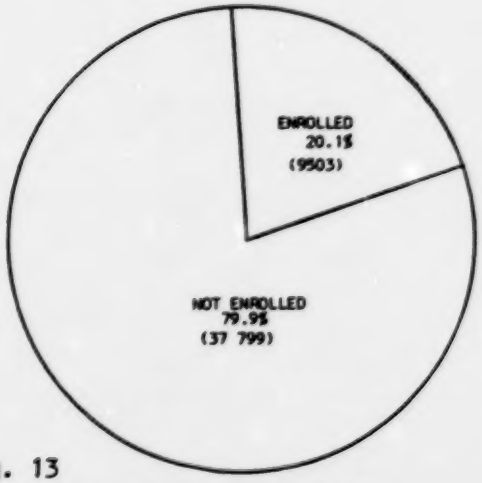


fig. 13

7-9 INVOLVED IN COMPUTER STUDIES

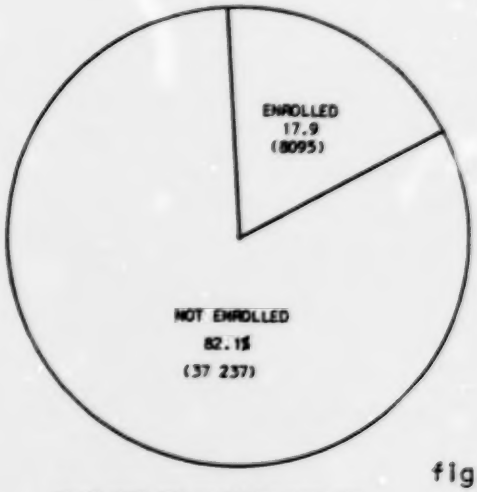


fig. 14

10-12 INVOLVED IN FORMAL COMPUTER COURSES

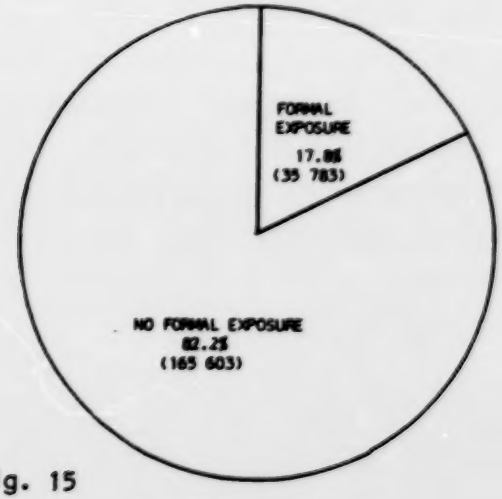


fig. 15

MANITOBA STUDENTS

VIII. CONDENSED COMMENTS OF EDUCATIONAL COMPUTING

The following comments are condensed from those made by respondants to the 1982-83 survey.

		#
1.	More Software/Courseware and their Evaluations required.	45
2.	More Computer-Related Curriculum information required.	45
3.	Main use of computers in our school is remedial, enrichment, teacher awareness, etc.	37
4.	More hardware required.	31
5.	More Inservice/Professional development required.	28
6.	More Funding required.	25
7.	More individual consulting required.	21
8.	Computers are a definite asset in our school.	18
9.	More information on Integrating Computers into Existing Curriculum required.	10

APPENDICES

APPENDIX A

☐☐☐

SURVEY OF EXISTING S OL COMPUTING

NAME OF COMPUTING CONTACT PERSON IN SCHOOL:_____

1. Are computers being used in your school this year (1982-83)?

☐ YES continue with question #2

☐ NO THANK YOU FOR YOUR HELP IN THIS SURVEY.

2. How many and what types of computing equipment are being used in your school this year (1982-83)? Please specify grade levels.

		NUMBER	GRADE LEVEL(S)
☐ Batch Terminal to Mainframe		____	_____
☐ Interactive Terminal to Mainframe		____	_____
☐ PET Commodore	2001	____	_____
	4016	____	_____
	4032	____	_____
	8032	____	_____
	SuperPET	____	_____
☐ TRS-80	Model I	____	_____
	Model III	____	_____
☐ Apple II Plus	32K	____	_____
	48K	____	_____
☐ Other (specify) _____		____	_____

3. How many and what types of peripheral equipment are being used in your school this year (1982-83)?

	NUMBER	TYPE(S)
☐ Tape drives	____	_____
☐ Disk drives	____	_____
☐ Printer	____	_____
☐ Other (specify)	____	_____

SURVEY OF EXISTING SCHOOL COMPUTING

NAME OF COMPUTING CONTACT PERSON IN SCHOOL: _____

1. Are computers being used in your school this year (1982-83)?

[400] YES — continue with question #2

[251] NO — THANK YOU FOR YOUR HELP IN THIS SURVEY.

2. How many and what types of computing equipment are being used in your school this year (1982-83)? Please specify grade levels.

# SCHOOLS			NUMBER HARDWARE UNITS	GRADE LEVEL(S)
[34]	Batch Terminal to Mainframe		34	
[7]	Interactive Terminal to Mainframe		18	
		# SCHOOLS		
[170]	PET Commodore 2001	21	57	
	4016	70	173	
	4032	105	313	
	8032	42	126	
	SuperPET	12	41	
			710	
[160]	TRS-80 Model I	28	79	
	Model III	141	450	
			529	
[102]	Apple II Plus 32K	18	47	
	48K	85	207	
			254	
[46]	Other (specify) ATARI, IBM, Texas Instruments		118	

3. How many and what types of peripheral equipment are being used in your school this year (1982-83)?

# SCHOOLS		NUMBER	TYPE(S)
[224]	Tape drives	775	
[261]	Disk drives	630	
[248]	Printer	336	
[44]	Other (specify)	64	

4. What computing courses or units do you offer in your school?

	COURSE	ENROLLMENT
☐	Computer Awareness K-3	_____
☐	Computer Awareness 4-6	_____
☐	Computer Awareness 7-9	_____
☐	Computer Awareness 105	_____
☐	Data Processing 202	_____
☐	Data Processing 302	_____
☐	Computer Science 205	_____
☐	Computer Science 305	_____
☐	Other (specify) _____	_____

5. Please list what you consider to be the 3 most effective pieces of software/courseware used in your school and where they may be obtained:

_____

_____

_____

_____

_____

6. Further comments on educational computing:

_____

_____

_____

_____

THANK YOU FOR YOUR COOPERATION
PLEASE RETURN TO:

COMPUTER SERVICES
307-1181 Portage Avenue
Winnipeg, Manitoba
R3G 0T3

4. What computing courses or units do you offer in your school?

# SCHOOLS	COURSE	ENROLLMENT
67	Computer Awareness K-3	5729
102	Computer Awareness 4-6	7681
104	Computer Awareness 7-9	9503
59	Computer Awareness 105	2624
46	Data Processing 202	1544
25	Data Processing 302	425
70	Computer Science 205	2591
48	Computer Science 305	911
90	Other (specify) ————————	4775
	TOTAL ENROLLMENT	35783

5. Please list what you consider to be the 3 most effective pieces of software/courseware used in your school and where they may be obtained:

6. Further comments on educational computing:

THANK YOU FOR YOUR COOPERATION

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